wall was reconstructed by gluing one side of the TPFF to the reverse side of the preserved posterior meatal wall skin.

Results: Mean time to complete epithelialization of the meatal skin in these 6 patients was shorter than that of 27 patients who underwent the meatal reconstruction using the free deep temporal fascia (26 days vs 37 days) statistically. No postoperative infection in operated ears occurred. CT scans performed 1 year after the surgery revealed that recovery of mastoid aeration was observed in 2 patients despite thorough removal of the mucosa in the mastoid cavity

Conclusion: The TPFF can provide optimal blood supply to the middle ear and external meatal skin. It is possible that the TPFF works positively not only for quick epithelialization and prevention of postoperative infection, but also for recovery of mastoid aeration.

P036

Rapid Maxillary Expansion and Nasal Patency of the Down Syndrome Pediatric Population

Carla Pinto Moura, MD (presenter); Fernando Vales, MD; David C Andrade, MD PhD; Luis M Cunha, PhD; Henrique Barros, MD PhD; Manuel C Pais Clemente, MD PhD

Leca da Palmeira Portugal; Lisbon Portugal; Porto Portugal; Porto Portugal; Porto Portugal; Porto Portugal

Objectives: Down syndrome (DS) is the most common aneuploid disorder at birth. Phenotypic characteristics include general axial hypotonia and maxillary hypoplasia with relative macroglossia contributing to constricted maxillary arch and nasal obstruction. This prospective study assesses the effect of rapid maxillary expansion (RME) on nasal permeability of DS children using acoustic rhinometry (AR) data. To our knowledge this is the first such study performed in a DS population.

Methods: AR have been performed in 24 DS children aged between 5 and 12 years (who were randomly allocated to RME and control groups) prior to expansion (T0), immediately after maximum expansion (approximately 1 month) (T1) and after a 5-month period of retention (T2); the data between the 2 groups were compared.

Results: On average, RME children showed a significant increase in the nasal volume from T0 to T1, which persisted through T2. A significant difference was noticed in the evolution of the minimal cross-sectional area (MCA) for RME children. Children in the control group did not show any significant improvement. The distance from the MCA does not show any significant difference with time in both groups. Nevertheless, in the RME group a noticeable change is observed, becoming more anterior, between T0 and T1, with almost no change at the last stage (T2); in contrast, results from the control group are not consistent with time.

Conclusion: Rapid maxillary expansion produced a significant augmentation of nasal volume, $P < 0.05$, compared to the control group; these results were stable through the period of retention.

P037

Influence of Nasal Obstruction in Face Dimensions According to Different Growth Phases

Renata DiFrancesco, MD PhD (presenter); Eugenia P Bregola; Rubens Simoes, DDS

Sao Paulo Brazil; Sao Paulo Brazil; Sao Paulo Sao Paulo

Objectives: The objectives of this study are investigating the facial and occlusal abnormalities in different phases of growth and correlate them to nasal obstruction in patients that need orthodontic treatment.

Methods: We selected 86 patients from 6 to 25 years old (37 male; 49 female) that needed orthodontic treatment. They were divided according to the skeletal phase of maturity (hand and wrist x-ray) into 3 phases of growth (prepuberal, puberal and postpuberal). Patients were submitted to ENT doctor's exam to determine if nasal obstruction was present. Patients were submitted to the orthodontist's examination that evaluated also the orthodontic casts, lateral and frontal cephalometric x-rays. Facial and dental findings of patients with and without nasal obstruction were compared by statistical analysis.

Results: This series showed that nasal obstruction was present in around half of the patients. It was associated to: higher frequency of dolychofacial pattern, class II skeletal pattern, palatal atresia, skeletal openbite, smaller nasal wideness, distance intermolars decreased, smaller maxillary and mandibular dimensions, and increased overjet. The majority of these characteristics were more prevalent in puberal and postpuberal phases of growth and in patients with a dolychofacial pattern.

Conclusion: These findings suggest that the longer the nasal obstruction, the worse the orthodontic abnormalities, mainly in dolychofacial patients and that the multidisciplinary approach may be very important to a successful treatment.

P038

Vocal Cord Abductor Paralysis Evaluated by Laryngoscopy in Multiple System Atrophy

Hideo Shinoda, MD (presenter); Sugata Takahashi, MD; Takayoshi Shimohata, MD PhD; Hideaki Nakayama, MD PhD

Niigata Japan; Niigata-Shi Japan; Niigata Japan; Niigata Japan

Objectives: Multiple system atrophy (MSA) is a chronic neurological disorder characterized by atypical parkinsonism and autonomic dysfunction. Sudden death during sleep is common among MSA patients. Sleep laryngoscopy demonstrates the restriction of abduction of vocal cords with a markedly reduced size of the glottic chink. Vocal cord abductor paralysis (VCAP) is considered to be an important predisposing factor of sudden death in MSA. The aim of this